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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-------------------------|------------------|
| 09/899,297 | 07/06/2001 | Makoto Yoshida | 033211-010 | 7675 |
| 7590 | 04/04/2006 | | EXAMINER | |
| Ellen Marcie Emas | | | MAGEE, CHRISTOPHER R | |
| BURNS, DOANE, SWECKER & MATHIS, L.L.P. | | | ART UNIT | PAPER NUMBER |
| P.O. Box 1404 | | | | 2627 |
| Alexandria, VA 22313-1404 | | | DATE MAILED: 04/04/2006 | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|----------------------|----------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/899,297 | YOSHIDA ET AL. | |
| | Examiner | Art Unit | |
| | Christopher R. Magee | 2627 | |

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 13 March 2006.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-3,6-9 and 12-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-3,6-9 and 12-14 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. The reply filed 03/13/2006 was applied to the following effect: All relevant objections and rejections are withdrawn as being satisfied.

Response to Arguments

3. Applicant's arguments with respect to claims 1 and 9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 6-9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshikawa (JP 03-162705; English machine translation, publication date 7/12/1991) in view of Iizuka (JP 2000-057534; English machine translation, publication date 2/25/2000).
 - Regarding claims 1-3 and 9, Koshikawa teaches a thin-film magnetic head comprising:

an inductive write head element including an upper core layer with a front end section magnetically coupling with an upper magnetic pole [16], a lower core layer with a front end section magnetically coil conductor [15] formed coupling with a lower magnetic pole [12], a coil conductor [15] formed to pass between said upper core layer and said lower core layer, and an coil insulation layer [14] for sandwiching said coil conductor; and

at least one thermal diffusion layer [21] with a good thermal conductivity in contact with said coil insulation layer [14] at an outside region of said upper core layer, said at least one thermal diffusion layer being in contact with a part of said coil conductor or constituting a part of said coil conductor, wherein no protection layer is present on the thermal diffusion layer [Fig. 1].

Koshikawa does not show a thin coating film formed on said thermal diffusion layer made of a material selected from Ti, Cr, Ta, Ni, Fe, Coe Au, Pt, Rh and Ru, or an alloy containing at least Ti, Cr, Ta, Ni, Fe or Co.

Iizuka discloses using a thin coating film [i.e., upper shielding 14] formed on said thermal diffusion layer [i.e., heat dispersion layer 16] made of a material selected from Ti, Cr, Ta, Ni, Fe, Coe Au, Pt, Rh and Ru, or an alloy containing at least Ti, Cr, Ta, Ni, Fe or Co. [section 0030; Figure 2].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the thermal diffusion layer of Koshikawa with a thin coating film as taught by Iizuka.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to provide the thermal diffusion layer of Koshikawa with a thin

coating film as taught by Iizuka in order to provide good distribution of the heat generated by the sensor [Iizuka; section 0030].

- Referring to claims 6, 7, 12 and 13, Koshikawa shows all the features, *supra*, except at least one thermal diffusion layer is made of a material with a thermal conductivity higher or lower than that of Al_2O_3 .

Further regarding claims 8 and 14, Koshikawa shows all the features, *supra*, except at least one thermal diffusion layer is made of a material selected from Au, Ag, Is, Zn, Al, Ir, Cd, Sb, W, Ta, Fe, Pb, Ni, Pt, Pd, Mg and Mo, or an alloy containing at least one of Au, Ag, Is, Zn, Al, Ir, Cd, Sb, W, Ta, Fe, Pb, Ni, Pt, Pd, Mg and Mo.

Iizuka discloses at least one thermal diffusion layer is made of a material selected from Au, Ag, Is, Zn, Al, Ir, Cd, Sb, W, Ta, Fe, Pb, Ni, Pt, Pd, Mg and Mo, or an alloy containing at least one of Au, Ag, Is, Zn, Al, Ir, Cd, Sb, W, Ta, Fe, Pb, Ni, Pt, Pd, Mg and Mo [section 0020].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the thermal diffusion layer of Koshikawa with a material as taught by Iizuka.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to provide the thermal diffusion layer of Koshikawa with a material as taught by Iizuka in order to provide good distribution of the heat generated by the sensor [Iizuka; section 0030].

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kondo et al. (JP 09-167314) is cited to show a thin-film magnetic head provided with a heat radiation plate.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (571) 272-7592. The examiner can normally be reached on M-F, 8: 00 am-4: 30 pm.
7. PLEASE NOTE the recent change in art unit designation from art unit 2653 to art unit 2627.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher R. Magee
Patent Examiner
Art Unit 2627

March 30, 2006
crm



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SUPERVISORY PATENT EXAMINER
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